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HOMOGENEITY AND SEPARABILITY  
OF IRRATIONAL BELIEFS

by



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A THESIS

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Homogeneity and Separability of Irrational Beliefs" submitted by Stanley Allen in partial fulfilment of the requirements for the degree of Master of Education.



## ABSTRACT

The present investigation was carried out to provide evidence of the homogeneity and separability of Ellis' eleven irrational beliefs as they are sampled by the I-I Inventory. Previous users of this and other measures of irrational beliefs have implicitly assumed that these beliefs can be divided into the categories delineated by Ellis and that the beliefs are sufficiently comparable to be incorporated into a single inventory.

These assumptions were put to empirical test in the present study. Initially an item analysis was carried out on the responses of 834 Alberta secondary school students to determine whether homogeneous groups of items measuring each of the eleven beliefs were actually present within the I-I Inventory. As a result of the item analysis 65 of the original 122 items were retained. These items were then grouped into two large clusters on the basis of their homogeneity as measured by the KR-20 reliability coefficient. Thus the original 11 subtests could not be separated empirically suggesting that the 11 beliefs were highly overlapping. An internal consistency estimate of 0.79 was found for the 65 item inventory indicating that the beliefs sampled are sufficiently consistent to be described by a single test score.





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Two ends of the telescope.  
One end shows me  
Enormous ego primed,  
Occupying the world.  
Reversed, a million me's  
Together less important  
Than a grain of sand.

Marje Ramsay



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## CHAPTER I

### INTRODUCTION

#### A. The Relationship Between Thought and Emotion

Many thinkers, from the Greek stoics to the present day, have suggested that, ultimately, it is man himself who is responsible for his reactions to events in the world around him. In Hamlet, Shakespeare expresses the thought, "There's nothing good or bad but thinking makes it so." Wallace Stevens, the twentieth century American poet, went even further, suggesting that man, through his imagination (his thoughts and ideas), creates, what for him is, reality. But, since the mind "creates" reality, it is also free within limits to recreate, to change and to modify the world as it is perceived. These views seem to be in line with those of Arnold (1960) who suggests that emotions and feelings are the result of evaluations which people often place on events which they observe.

It is intriguing to reflect upon the notion that man, through cognitive action can control or modify his emotional reactions. Thus, when Ellis (1958, 1962) proposed his theory of "irrational beliefs", based largely upon a connection between thought and emotion, it received a good deal of attention from psychologists. Essentially the theory depends upon the following assumptions:

1. Human thinking and emotion are not disparate or different processes...they significantly overlap and are in some respects essentially the same.
2. Most everyday thinking is done in the form of words, phrases and sentences.





3. One may appreciably control one's emotion by controlling one's thoughts. (Ellis, 1962, pp. 35-60)

Ellis contends that sustained emotions are due to evaluative statements (thoughts) which the individual "tells" himself. These evaluations are based upon the person's belief or value system. Since he contends that irrational and illogical beliefs are widely prevalent, a major part of Ellis' therapy is related to changing these beliefs and subsequently modifying the self-deprecating statements upon which the patient sustains self-defeating emotions. While these are assumptions and cannot be proven directly, Ellis presents a good deal of evidence to support them.

As a part of the theory, Ellis outlined eleven specific "irrational ideas" which he suggested were the major causes of "sustained negative emotion."\* Subsequently, several researchers developed instruments designed to give an objective measure of these irrational beliefs. These instruments are potentially valuable since they may well provide a means for identifying persons whose self-deprecating statements cause them to function at less than peak efficiency. In addition, Ellis through his approach to psychotherapy provides a means whereby these persons can be aided in overcoming their irrational beliefs.

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\*Examples of sustained negative emotion include: intense depression, anxiety, anger and guilt (Ellis, 1962, p. 52).



## B. The I-I Inventory as a Measure of Irrational Beliefs

Zingle (1965) developed the Irrational Ideas Inventory (I-I Inventory) to measure irrational beliefs. The I-I Inventory, in its original form is a 122 item instrument using a 5-point Likert-type scale. Contained within the instrument are eleven subtests corresponding to the eleven beliefs specified by Ellis.

This instrument was shown by Zingle and again by Conklin (1965) to be useful for identifying underachievers. Hoxter (1967) found that the I-I Inventory was a good predictor of certain kinds of maladaptive behaviour in the classroom. Taft (1968) showed significant correlations between the I-I Inventory and several measures of anxiety. Sanche (1968) found the instrument useful for measuring attitude changes with a group of slow learning students. Fox (1969) showed a significant relationship between the I-I Inventory and his Life-orientation Scale (LOT) which is based upon the theoretical formulations of Erich Fromm. In each of these instances theoretical connections were made between the various criteria measured and Ellis' theory of irrational beliefs. Thus on the basis of previous research it appears that the I-I Inventory is a valid measure of irrational beliefs. Zingle (1965) reported a test-retest reliability of .80 over a five week period suggesting that the instrument has acceptable reliability as well.

## C. The Problem Under Investigation

Despite the demonstrated utility of the I-I Inventory it may be unnecessarily long and inefficient. Ellis (1962) points out that





his listing of eleven specific ideas... "may be classified in various ways so that the...listing is not meant to be definitive or non-overlapping (p. 61)". Zingle and other users of the I-I Inventory have not fully studied the individual items and subtests within the I-I Inventory to determine whether the individual subtests, corresponding to the eleven specified beliefs can:

- a) be grouped together to form a single homogeneous test;
- b) be separated on the basis of empirical data into the eleven theoretical groupings.

Other tests designed to measure the degree to which individuals hold "irrational beliefs" (Lafferty (1963), Gustav, Hartman, Argabrits and Nidor (1968 \*), while varying in format and design, have also retained Ellis' suggested classifications. No one to date has attempted to re-classify "irrational beliefs" into a more succinct structure or determine whether the eleven original ideas are sufficiently compatible to be incorporated into a single test measuring "irrational tendencies."

The purpose of the present investigation is to provide empirical evidence relating to the compatibility and independence of Ellis' eleven irrational beliefs. Evidence is provided by examining the responses made to the I-I Inventory by a large sample of secondary school students in the Province of Alberta. The details of the procedures used are presented in Chapter III. In Chapter II a summary

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\*The three latter instruments are reported in the same publication.



of previous research using the I-I Inventory is presented. This presentation of related research is aimed at providing the reader with more detailed evidence to substantiate the validity and reliability of the I-I Inventory.



## CHAPTER II

### VALIDITY OF THE I-I INVENTORY

#### A. Introduction

Since its construction in 1965, the I-I Inventory has been used in a number of research studies. Each of the studies carries with it important implications regarding different aspects of the validity of the instrument. For this reason each study will be reported separately in this chapter. Logical connections between the phenomena measured in each of the studies and Ellis' concept of irrational beliefs will be emphasized. In this manner evidence to support the validity and reliability of the I-I Inventory will be presented.

#### B. Irrational Beliefs and Underachievement

The I-I Inventory was constructed by Zingle (1965) as a part of his work with underachieving high school students. Drawing from a number of sources including: Festinger (1954, 1957), Luria and Yudovich (1959), Rokeach (1960), Hebb (1955) as well as Ellis (1958, 1962) and others, Zingle formed explicit logical connections between irrational beliefs, sustained negative emotions and underachievement. On the basis of these connections Zingle hypothesized that under-achievers would be high in irrational beliefs and that these irrational beliefs were a partial cause of the students' poor performance. Following this line to a logical conclusion, Zingle reasoned that counseling underachieving students, by the rational





emotive method described by Ellis, would lead to reduction in irrational beliefs and commensurate improvement in school performance.

In order to test his hypothesis, Zingle needed, among other things, a valid and reliable measure of irrational beliefs. Thus as part of his research, Zingle constructed the I-I Inventory. To establish construct validity, the I-I Inventory was administered to 751 students in grades 10, 11 and 12, who had been divided into three criterion groups: overachievers, average achievers, underachievers.\* Means and standard deviations for the three groups were calculated and are shown in Table 1.

TABLE 1

MEANS AND STANDARD DEVIATIONS FOR THE THREE  
CRITERION GROUPS ON THE I-I INVENTORY

GROUP	N	MEAN	STANDARD DEVIATION
Underachievers	90	365.09	33.69
Average Achiever	556	358.38	28.60
Overachiever	105	361.96	31.32

A one way analysis of variance showed each pair of means of the criterion groups to be significantly different from one another ( $p < .01$ ) not only on the total test scores but on subtest 7 and 10 scores as well. The logical connection between irrational beliefs and underachievement substantiated by these scores established

\*The method and criteria of separating the students into these groups is described by Zingle (1965, p. 28).



connections between test and non-test manifestations of the trait, thus implying construct validity for the I-I Inventory. Further evidence of construct validity was reported by Zingle who found a significant reduction in the I-I Inventory scores of those persons in his study who were counseled using rational-emotive techniques.

Zingle reported a test-retest reliability of .80 over a five week period for the overall test. The reliability coefficients for the individual subtest scores ranged from .46 to .81. Inter-correlations between the eleven subtest scores ranged from .00 to .50. Since 40 of the 53 intercorrelations were less than .20, the subtests appeared to measure somewhat different tendencies.

Zingle ensured content validity in a number of ways. First, items were written specifically to measure the eleven irrational beliefs specified by Ellis. From the original pool 122 items were retained. The number of items within the subtests ranged from 7 to 13 items. "A major effort was made to ensure veridicality and authenticity of the items...(Zingle, 1965, p. 43)." In order to minimize potential contamination due to response set, approximately one-half of the items were worded in such a way that agreement signified irrationality. In the remainder, disagreement signified irrationality. Three judges, familiar with Ellis' work, were then asked to label independently the items according to the belief they felt each item measured. Intercorrelations with Zingle's classification ranged from .75 to .85.

#### C. Underachievement, Conceptual Complexity and Irrational Beliefs

After noting the correlation between I-I Inventory scores and





achievement reported by Zingle, Conklin (1965) recognized the potential value of the I-I Inventory as an instrument for the early identification of underachievers. If, as Zingle's work suggested, students high in irrational beliefs tended to be underachievers, the I-I Inventory, Conklin reasoned, might identify students who were developing habits and beliefs which would interfere with their school progress at some point. Students so identified could be counseled regarding their self-defeating tendencies, thereby eliminating or greatly reducing the problem of underachievement for these particular students.

Using the responses of the students (751) in Zingle's sample, Conklin did an item analysis on the I-I Inventory and found 25 items\* which best discriminated between the criterion groups defined as: overachievers, average achievers and underachievers.

Conklin reported a test-retest reliability figure of .73 for the shortened version of the test. Thus, although the revised version of the I-I Inventory was approximately one fifth the length of the original, the reliability was not appreciably reduced.

Using the scores obtained on the revised instrument, Conklin found significant differences between the means of the criterion groups. However, while Zingle found that average achievers had fewer irrational tendencies than either overachievers or underachievers, Conklin (see Table 2) found the scores on the revised test

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\*The specific means by which these items were selected are given by Conklin (1965, p. 16-19).



reversed the order of the average and overachieving groups. The net result was that the mean scores of the underachievers were significantly higher than the mean scores of the average achievers which in turn were significantly higher than the mean scores of overachievers.

TABLE 2  
  
MEAN TOTAL SCORES OBTAINED BY THE THREE CRITERION  
GROUPS ON THE I-I INVENTORY (REVISED)

UNDER ACHIEVERS N 100		*AVERAGE ACHIEVERS N 103		OVER ACHIEVERS N 115		NET DIF.	t	SIGNIFICANCE LEVEL
$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.			
60.67	12.05	57.15	10.43			3.52	2.220	.05
60.67	12.05			52.00	9.36	8.67	5.901	.0005
		57.15	10.43	52.00	9.36	5.15	3.829	.0005

\*Conklin's method of defining the criterion groups was somewhat different from Zingle's. Thus, of the 751 students in the sample, only 318 were classified into criterion groups. Specific details are given by Conklin (p. 30-33).

Further investigation by Conklin revealed a significant correlation ( $r = .356, p < .01$ ) between scores obtained by his subjects on the Barron's Complexity Scale (BCS) and the I-I Inventory (Revised). Barron describes persons who score high on the BCS as being non-conforming, complex and impulsive. In a later publication (Conklin, Boersma and Zingle, 1967) an explanation of the correlation is suggested.



The relationship between the BCS and the I-I Inventory may be accounted for by the fact that the I-I Inventory hypothetically measured the degree to which an individual does not conform to the logical and rational aspects of the world. It might follow that in order to be rational one must conform to social norms. Thus, it could be that Barron's description of the complex scores as nonconformist, independent and unconventional is a plausible tie for the relationship between the two scales.

#### D. Unsociable School Behavior and Irrational Tendencies

A sample of 169 culturally deprived fourteen year old boys from slum areas of Philadelphia were divided into two groups on the basis of their conduct in the classroom. Hoxter (1967) hypothesized that the 102 subjects which he labelled stream disoriented, due to there being behaviour problems, would show greater irrational tendencies than would the remaining 67 subjects who were not behavior problems.

In order to test his hypothesis, Hoxter administered a modified version of the I-I Inventory to his subjects. The modified version, while it was based upon Zingle's original I-I Inventory, had several noteworthy changes. Hoxter used only seven of the original eleven subtests as a basis for his instrument. He reasoned that four of the ideas were too advanced for use with his sample of culturally deprived fourteen year olds. Specifically he suggested that irrational ideas\* 1, 3, 10, 11 were based upon concepts beyond the maturity of the boys in his sample. In addition, Hoxter simplified the language in a number of the items which he retained. The

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\*See the Appendix for complete list of the eleven irrational beliefs.





version of the I-I Inventory used by Hoxter contained 47 items.

Using this modified version of the I-I Inventory, Hoxter found differences in the scores obtained by his criterion groups (see Table 3). These differences were in the direction predicted and were significant, thereby supporting Hoxter's hypothesis. In addition, Hoxter found significant correlations (.51, .65, .62) respectively, between the modified I-I Inventory and the Personal, Social and Total adjustment scales of the California Test of Personality. These correlations indicate that persons high in irrational beliefs tend to show signs of maladjustment as measured by the California tests. Since a reliability estimate for the shortened version of the I-I Inventory ( $KR\ 21 = .62$ ) was considered by Hoxter (1967) to be acceptable, these findings have implications regarding the validity of the original version of the I-I Inventory upon which Hoxter's version was based. The demonstrated relationship between maladaptive (self-defeating) behaviour and I-I Inventory scores forms a relation between non-test and test manifestations of irrational traits, thereby giving external evidence to support the validity of the test. The relationship between the scores of the subjects on the California tests and the I-I Inventory provides further evidence of construct validity, since these relationships were predicted on the basis of logically derived connections.

#### E. The I-I Inventory as an Instrument for Measuring Attitude Change with Slow Learning Students

In his study to determine the benefits of work experience for



TABLE 3

MEANS AND ADJUSTED MEANS OF IRRATIONAL  
IDEAS SCORES FOR STREAM-ORIENTED  
AND STREAM-DISORIENTED GROUPS

GROUP	N	MEANS	ADJUSTED MEANS*
S <sub>D</sub>	102	137.35	136.36
S <sub>O</sub>	67	115.99	117.50
DIFFERENCE		21.36	18.86

\* Adjustments were made to take into account the variance found by Hoxter which was due to discrepancies in socio-economic status and intelligence of the groups.

For further explanation, an analysis of covariance revealed that the group differences were significant at the .001 level.





educationally retarded youth, Sanche (1967) administered Hoxter's version of the I-I Inventory to a sample of 119\* retarded students in Saskatchewan schools. Sanche hypothesized that the 60 students who received work experience would show a significantly greater reduction in irrational tendencies than would 59 similar students who remained in a traditional vocational program. Using the I-I Inventory as a criterion measure, Sanche was able to confirm his hypothesis.

The fact, demonstrated by Sanche, that the I-I Inventory is useful in measuring changes in the attitudes of slow learning students along with previous findings of Hoxter and Zingle, lend credence to Ellis' suggestion that irrational beliefs are, indeed, ubiquitous. On the basis of these studies, the utility of the instrument has been demonstrated over a broad geographic, socio-economic and intellectual range.

#### F. Correlation between Anxiety and Irrational Beliefs

From a sample of 238 Edmonton high school students, Taft (1968) used as cut off points, the 25 highest male and female scores as well as the 25 lowest male and female scores. Upon administering the original version of the I-I Inventory, due to some tie scores, 62 subjects were classified as high in irrational beliefs while 66 others were classified as being low. Taft then examined the mean scores obtained by the criterion groups on six measures of anxiety.\*\* In accordance with the

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\*The original sample contained 133 Ss, however, 14 of these left school before post-testing was completed.

\*\*The measures used were: The Maudsley Personality Inventory, Revised Taylor Manifest Anxiety Scale, Willoughby Personality Schedule, Neuroticism Scale of the Maudsley, Emotional Sensitivity Scale of the Willoughby, Unadaptive Anxiety Reaction Scale of the Willoughby.



suggestion that irrational beliefs lead to sustained negative emotions, Taft hypothesized that groups high in irrational beliefs would score significantly higher on all anxiety measures than would their more "rational" counterparts. Significant differences ( $p < .001$ ) in the hypothesized direction were found between the mean scores of the criterion groups on all six measures. On one measure this difference could be attributed to sex differences since females showed significantly higher ( $p < .001$ ) scores on this measure than did males. Despite this minor qualification, the confirmation of the relationship between anxiety measures and irrational tendencies is strong evidence to support the construct validity of the I-I Inventory.

#### G. Life-Orientation and Irrational Beliefs

As a part of his study of the "Life Orientation"\* of a number of samples of persons representing a cross section of society, Fox (1969) administered the original version of the I-I Inventory to a sample of 84 high school students in rural Alberta. These students were divided into two criterion groups on the basis of their scores on the Life Orientation Scale\*\* (LOT). Fox hypothesized that the mean I-I Inventory scores of persons defined as high LOT scorers, would be significantly higher than the mean scores of those designated as low LOT scorers. Subsequent analysis of the data confirmed ( $p < .01$ ) the hypothesis. Fox (1965, pp. 24-25) provides a logical connection between

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\*This term based upon the writing of Erich Fromm is fully explained by Fox (1969).

\*\*This instrument was developed by Fox.



life-orientation and irrationality. Low LOT scorers are described as being authoritarian, closeminded, uncritical in their thinking and dogmatic. The demonstrated relationship between persons so described and persons scoring high on the I-I Inventory is further evidence to support the construct validity of the instrument.

#### H. Conclusion

Evidence presented to this point seems to indicate that the I-I Inventory is a valid and reliable measure of irrational beliefs. The instrument has been proven useful in a wide demographic, geographic and intellectual range, thereby lending credence to Ellis' suggestion that irrational beliefs are ubiquitous in western society. Theoretical connections have been made between irrational tendencies and such phenomena as: (a) underachievement, (b) conceptual complexity, (c) maladaptive school behavior, (d) anxiety, (e) life-orientation. In each case empirical evidence to support these connections has been obtained by using the I-I Inventory in either its original or a modified form as a measure of irrational beliefs. On this basis it appears that the validity and reliability of the instrument has been established. The task of the present investigation will be to investigate the internal structure of the I-I Inventory as a means of clarifying the interrelatedness of Ellis' eleven irrational beliefs.





## CHAPTER III

### RESEARCH PROCEDURE

#### A. Introduction

Evidence presented suggests that the I-I Inventory is a valid and reliable measure of irrational beliefs. The instrument appears to be useful not only as a diagnostic tool, but also as a prescriptive device. Presumably persons whose scores on the I-I Inventory indicate that they adhere strongly to a number of irrational ideas, can be counseled regarding these beliefs and thereby helped to overcome their self-defeating tendencies. However the extent to which irrational beliefs are homogeneous and separable has not yet been fully investigated. Investigators thus far have implicitly assumed that irrational beliefs are separable into the eleven categories suggested by Ellis (1962). They have further assumed that the eleven categories are sufficiently compatible so that a single test score can be considered descriptive of a person's irrational beliefs. The latter assumption depends upon the homogeneity of the eleven beliefs measured while the former is contingent upon the separability of the eleven beliefs sampled.

In the present investigation an attempt was made to determine the extent to which these assumptions are tenable. In order to make inferences relating to these assumptions the following action was taken:



1. An item analysis to insure a homogeneous pool of items sampling each of the eleven beliefs was contained within the I-I Inventory.
2. A cluster analysis to determine whether the beliefs sampled are separable into the categories articulated by Ellis.
3. External correlations with a number of variables were carried out to determine whether the shortened version of the I-I Inventory, produced as a result of the item and cluster analyses maintained the characteristics of the 122 item version.

The details of procedures alluded to above are explained more fully in subsequent sections of the present chapter.

#### B. Data Gathering

As a result of a large scale investigation of adolescent values, Zingle (1969) administered fifteen questionnaires to over sixteen hundred secondary school students in Edmonton and surrounding areas in northern Alberta. While not all questionnaires were administered to all students involved in the study sufficient numbers were sampled to give some indication of the values present in this area. A complete analysis of these data is not presently available for publication. However, segments of the data have been used by a number of investigators including Scott (1969) and Sawatzky (1969). Of the total number of students in the larger study 834 useable responses to





to the I-I Inventory were collected. Details related to these 834 respondents are included in the next section.

#### C. The Sample

The 834 respondents to the I-I Inventory were enrolled in secondary schools in northern Alberta. Of this number there were 407 females and 427 males ranging from grade 7 through grade 12. Of the total 687 were attending schools in the city of Edmonton, while 147 attended schools in a rural center.

#### D. Item Analysis

Since the present research was intended to determine the inter-relatedness of Ellis' eleven irrational beliefs, as they are sampled by the I-I Inventory, a necessary first step was deemed to be an item analysis to determine whether the items contained in the individual sub-tests of the inventory are homogeneous measures of the belief they were intended to sample. The content validity portions of the studies of Zingle and Conklin took, to an extent, this criterion into account. However, empirical grouping of the items on the basis of the analysis of responses made to the test items had not been attempted. The procedure used in the present study for item selection was an adaptation of the method outlined by Ebel (1965, pp. 346-367). A modification of Ebel's procedure was necessary since, in the present investigation a 5-point Likert scale was used for scoring. Ebel and other authors have confined



their attention to Guttman scales wherein responses are scored either '1' or '0'. In this study Pearson product-moment correlations were calculated for all combinations of the 122 items and eleven subtests contained in the I-I Inventory. In accordance with the suggestions of Gulliksen (1959) it was decided to retain at least 5 items in each of the eleven subtests. This criterion was used to establish a lower limit on the acceptable correlation of items to subtest scores.

As an interesting comparison and as further evidence of the content validity of the I-I Inventory a copy of the instrument was given to Ellis for his inspection and comments. Normally, to ensure content validity the opinion of experts regarding the validity of the items is solicited. Obviously, in the present investigation, the person most qualified to give expert opinion was Ellis himself. Specifically Ellis was asked to select from each individual subtest the items which, he believed, were the most valid measures of the respective eleven irrational beliefs. A comparison was made to determine the degree of commonality between the items selected by Ellis with those empirically selected on the basis of a data analysis.

#### E. Cluster Analysis

On the basis of the empirical item analysis described in the previous section, eleven homogeneous subtests were identified. Further analysis to determine subtest commonality and underlying structure was undertaken. As a preliminary step, a factor analysis was carried out to determine whether strong identifiable factors were



present. The results indicated that the I-I Inventory was factorially complex, containing 25 factors with eigenvalues of one or greater. Despite heavy loadings of most items on the first ten factors, these factors were able to account for only 36.34 per cent of the total variance. As might be expected, the results were hard to interpret and provided little insight into the value of individual test items. For this reason, an alternate method of analysis was undertaken. This method described by Gupta (1968), groups items into homogeneous clusters on the basis of simple objective criteria. Based on the technique developed by Loevinger, DuBois and Gleser (1953), items are included in a cluster only if they raise the KR-20 reliability estimate of the cluster.\* Briefly the method proceeds as follows:

Step 1 - a variance-covariance matrix for all the items is calculated.

Step 2 - the three items with the highest KR-20 estimate are grouped in a 'cluster'.

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\*Originally Loevinger suggested the inclusion of items if they raised a quantity called "the maximizing ratio" of the cluster. However, this quantity is directly proportional to the KR-20 reliability estimate and was selected because of computational simplicity.





Step 3 - all items are tested to determine which of the remaining items will cause the greatest increase in the KR-20 value. This item is added to the cluster. Items which lower the KR-20 estimate are deleted from further consideration.

Step 3 is repeated until there are less than three items remaining. The deletion of the items at each stage is optional and is included to prevent "functional drift," that is, "the inclusion of items measuring function A, then items measuring A and B, and finally measuring B only (DuBois, Loevinger and Gleser, 1952, p. 5)."

In the present investigation a preliminary analysis making use of the deletion option was carried out. In a subsequent analysis the deletion option was removed to provide a broader range of information upon which to judge the internal structure of the I-I Inventory.

#### F. External Correlates

As a result of the test analyses described above, it was anticipated that a number of the items in the original 122-item version of the I-I Inventory would be excluded. To ensure that the remaining items provided an adequate measure of traits sampled by the original version the original and modified versions of the I-I Inventory were correlated with several external measures of various psychological tendencies. Foremost among these comparisons was a correlation of the two versions of the I-I Inventory with a modified version of Rokeach's Dogmatism Scale described below.



Rokeach (1960) suggested that all men are subject to a belief-disbelief system which serves two conflicting needs simultaneously. Thus, man has a need to know and understand and, at the same time, a need to ward off the threatening aspects of reality. As Rokeach sees it, if the need to know is predominant, open mindedness should result. If, by contrast, the need to ward off threat is predominant, a more closed system should result. Persons with closed belief systems, the high dogmatics, are prone to taking simple 'a priori' stands, which are often illogical, and defending them relentlessly despite evidence which is often contrary to their belief.

In the present study, a modified short form of Rokeach's scale called "What I Believe"\* (WIB) was administered to the students mentioned in the previous section. Ruthe (1969) reports that the 25 items contained in this modified, shortened version were designed to measure four general areas. Included in these areas, were the persons attitudes toward authority figures, his feeling of alienation and impotence, tolerance toward others with dissimilar beliefs, and the presence of contradictions among these and other beliefs. Since Rokeach regards high dogmatics as possessing "irrational internal drives" which are described as "compulsive repetitions of ideas and arguments self-proselytization (Ruthe, 1969, p. 4)" a logical connection between high scores on the What I Believe and the I-I Inventory was hypothesized.

The dogmatism scale used in this study has been carefully validated in a number of investigations. Rokeach (1960, p. 89) reports reliability estimates which range from .68 to .93. Sawatzky (1968, p.49)

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\*A copy of this scale is included in the Appendix.



reports a test-retest estimate of .82 over a three month period (N=20).

As further evidence of the structural similarity of the original and shortened versions of the I-I Inventory, scores on the two instruments were compared with subjects' scores on several variables including English achievement, intelligence, church attendance and political preference. The scores on these variables were obtained by Zingle (1969) in the previously mentioned study of adolescent values. On the basis of earlier work done by Zingle (1965) and the correlation of  $-0.233$ , ( $p < .05$ ) reported by Conklin (1965, p.24) between his 25 item version of the I-I Inventory and scholastic achievement, it was expected that persons high in irrational beliefs (i.e., high scorers on the I-I Inventory) would achieve poorly in English. Thus a significant negative correlation between I-I Inventory scores and the English grades reported by teachers was anticipated. In the case of the latter three variables mentioned above non-significant correlations with I-I Inventory scores were expected. On the basis of Ellis' contention that irrational tendencies are "ubiquitous and omnipresent" a random distribution of irrational traits throughout the sample was expected. In particular it was anticipated that non-significant relationships between irrational tendencies and church attendance, political preference and intelligence would be observed. SCAT scores obtained from the files of the Department of Education were used as a criterion measure of intelligence. Political preference and church attendance data were obtained from an







information sheet (a copy of which is included in the Appendix) distributed by Zingle. Since in Zingle's study not all students completed all questionnaires there are some differences in the sub-samples in each of the preceding variables. The following table makes these differences apparent.

TABLE 4

SAMPLE DESCRIPTIONS FOR THE FIVE VARIABLES USED TO  
DETERMINE THE DEGREE OF STRUCTURAL CONGRUENCE  
BETWEEN THE ORIGINAL AND SHORTENED  
VERSIONS OF THE I-I INVENTORY

VARIABLES	N	SAMPLE DESCRIPTION
Rokeach's Scale (WIB)	776*	Secondary School students in grades 7 through 12 who with only minor discrepancies are the same students who completed the I-I Inventory
Church Attendance	779	As described above
Political Preference	446	As described above
Intelligence (SCAT) scores	215	Grade 11 students only from above sample
English Grades	169	Grade 11 students from an urban High School

\*The observed differences in the number of subjects sampled on the first two variables reported in the above table are caused by such factors as absenteeism and/or incomplete, missing or incorrect data on one or more of the measures. In the case of the political preference data many students displayed no political preference.



## CHAPTER IV

### RESEARCH FINDINGS

Analysis of the data was carried out along three major lines as described in Chapter III. These were (a) item analysis, (b) cluster analysis, and (c) investigation of external correlates. The findings are reported in the three sections below.

#### A. Item Analysis

Pearson product-moment correlations were calculated for all combinations of the 122 items and eleven subtests contained in the I-I Inventory. Items which correlated 0.300\* or higher with any of the eleven subtests were retained for further analysis. This resulted in the retention of 70 items; three of which were reclassified to new subtests on the basis of the observed correlations. The original process was repeated for the 70 remaining items and 11 subtests. In 65 of the 70 cases correlations of 0.400 or higher were observed. For the remaining 5 items, including one which had been reclassified, the correlations did not improve to the same extent and these items were dropped from the test at this point. The items retained after item analysis are listed in the Appendix.

In addition to the procedure described above a second method of item analysis was carried out. A copy of the original 122 item I-I Inventory was submitted to Ellis. He was asked to select the items

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\*This figure was chosen arbitrarily to ensure that at least 5 items from each of the subtests were included for further analysis.



from each of the individual subtests which, he felt, were the most valid measures of the respective eleven irrational beliefs. He was given no instructions regarding the number of items he was to choose or reject. He was simply asked to choose those items which he thought were most relevant in each subtest. As a result Ellis selected 51 items. Since 32 of these 51 items were also selected through the previously described item analysis a commonality coefficient of 0.63 was calculated. The Appendix contains a table comparing the items selected by the two methods described above.

In his correspondence Ellis indicated that he felt most items\* "are quite relevant" but that some "are rather mildly stated if just a 'yes' or 'no' response is expected." This statement indicates that Ellis had a "1" or "0" scoring system in mind when considering the wording of items in the I-I Inventory. Actually as described by Zingle (1965, p. 43) responses on the I-I Inventory are scored "on a five point, graphic, Likert-type scale. The five points represent: strongly agree, agree, undecided, disagree, and strongly disagree. These answers are weighted 5,4,3,2, and 1 respectively, with 5 representing the highest degree of irrationality." The 5 point scale has the effect of intensifying responses at either extreme. Had this factor been taken into account it seems likely that the degree of commonality between the methods would have been higher.

As a result of the item analysis the number of items retained for

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\*Personal correspondence dated June 10, 1969.





the cluster analysis was reduced from 122 to 65. The method of item selection was chosen to ensure that the items retained constituted the most homogeneous grouping of items sampling the eleven specific irrational beliefs. Since at least 5 items were included in each subtest after the item analysis, enough items were retained to identify 11 traits if the subtests within the I-I Inventory proved to be distinct and separate.

#### B. Cluster Analysis

The item analysis described in the previous section identified eleven homogeneous subtests corresponding to Ellis' eleven irrational beliefs. A cluster analysis to determine the manner in which these subtests are inter-related was carried out. This involved determining the homogeneity and separability of the subtests contained within the I-I Inventory.

Initially a direct application of Loevinger's (1953) method was employed. This method described in Chapter III has the effect of producing a maximum number of clusters containing at least 3 items and is therefore intended to provide maximum separability of traits. Consequently the 65 items were divided into 7 clusters containing from 3 to 22 items. The three clusters which had the highest internal consistency were also the largest clusters containing 22, 9 and 13 items respectively. The items included in these clusters are listed in the Appendix.

On the basis of the observed groupings several traits were identified. The items in cluster number 1 seem to measure insecurity and lack of confidence. These could perhaps be related to feelings of



hopelessness or impotence. The nine items in cluster number 2 seem to be logically related to those in cluster number 1, but they are more closely tied to interpersonal and particularly family concerns. Lack of affection and alientation seem best to describe the emotions associated with this cluster. Cluster number 3 contains items of a different genre. Items in this group seem more closely related to moral issues, in particular they seem to advocate rigid and simplistic ethic standards.

These three clusters contained 44 or approximately two-thirds of the 65 items retained from the original test. While traits could be identified for the 44 items in the major clusters the remaining 21 items were more difficult to place. Although one cluster contained 7 items most of the remaining groups contained only 3 items. In addition, the KR-20 estimates of internal consistency dropped progressively making it impossible to identify traits for these minor clusters. In order to clarify the contribution of the remaining items a second method of analysis was carried out. In this case the deletion option described earlier was removed. This had the effect of reducing the number of clusters while increasing the number of items included in each. In effect the first method produces a maximum number of clusters which measure purer psychological traits. Gupta (1968) has shown the method to be equivalent to factor analysis.

The second method allows an item to be tested many times for inclusion in a cluster. Thus an item which was rejected at one or more points because it lowered the KR-20 of the then prevalent cluster might later be included because due to the inclusion of more items a



broader psychological trait was measured and the item might then raise the internal consistency of the larger cluster. This analysis reduced the total number of clusters from 7 to 3. The base of the largest cluster containing 42 items was made up of items from clusters 1 and 2 of the previous analysis. The second grouping of 18 items was comprised largely of items from cluster number 3 of the former grouping. Other items which had not been included previously in the 3 larger clusters were added to these basic groupings. The third cluster contained 3 of the remaining 5 items while 2 items remained ungrouped. Listed below are the results of the second method of analysis.





TABLE 5

ITEM CLUSTERS CONTAINED IN THE  
I-I INVENTORY

42 Items                                      Cluster #1                                      KR-20 estimate .81

ITEM NUMBER	ITEM STEM	IRRATIONAL BELIEF NO.
39	I worry over possible misfortunes	6
92	I tend to worry over possible troubles	6
15	I worry about little things	4
49	My feelings are easily hurt	1
100	It hurts me when my friends are unkind	1
97	When a friend ignores me I become extremely upset	4
105	I find it very upsetting when people who are important to me are indifferent to me	1
45	Jeers humiliate me even when I know I'm right	1
59	I get terribly upset and miserable when things are not the way I would like them to be	4
35	I find it difficult to take criticism without feeling hurt	2
76	Other people's problems frequently cause me a great deal of concern	10
65	I get upset when I hear of people (not relatives or close friends) who are very ill	10
43	I get disturbed when neighbours are very harsh with their children	10
83	I can face a difficult task without worry	6
79	I worry about tests	2
101	I worry about the possibility of an atomic attack by some foreign power	6



TABLE 5 (continued)

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113	It makes me uncomfortable to be different	1
50	Sometimes I am troubled by thoughts of death	6
61	I worry about eternity	6
34	Sometimes I feel that no one loves me	1
72	I can walk past a grave yard alone at night without feeling uneasy	6
17	I sometimes worry about my health	6
54	I get annoyed when people are impolite to me	10
78	I wish that more affection were shown by more members of my family	1
16	There are people who try to do me harm or hurt me	5
93	Many of my classmates are so unkind or unfriendly that I avoid them	7
69	The members of my family seem to criticize me a lot	7
102	I often spend more time in trying to think of ways of getting out of something than it would take me to do it	7
87	He that loses his conscience has nothing left that is worth losing	11
5	I have sometimes had a nickname which I didn't like very well	5
81	When things are not the way I would like them to be, and it is not in my power to change them, I calmly accept things the way they are	4
91	Sticks and stones will break my bones, but words will never hurt me	5



TABLE 5 (continued)

70	I get very angry when I miss a bus which passes only a few feet from me	4
20	It is a big aid to health to say each morning, "Day by day in every way I am getting better and better"	9
103	I feel my parents have dominated me too much	8
89	My folks appear to doubt whether I will be successful	7
7	I prefer to accept suggestions rather than work them out for myself	7
117	I am naturally a lazy person	7
67	My folks do not take time to become acquainted with my problems	1
95	If a child is brought up in a home where there is much quarreling and unhappiness he will probably be unhappy in his own marriage	9
4	I usually object when a person steps in front of me in a line of people	4
86	A juvenile delinquent will almost surely be a criminal when he becomes an adult	9

ITEM NUMBER	ITEM STEM	IRRATIONAL BELIEF NO.
18 Items	Cluster #2	KR-20 estimate .60
112	It is sinful to doubt the Bible	11
104	I know there is a God	11
119	Persons who are punished for their "sins" usually change for the better	3
107	The best way to teach a child right from wrong is to spank him when he is wrong	3
47	Punishment is a sure cure for crime	3





TABLE 5 (continued)

33	The good person is usually right	11
98	If a person tried hard enough, he can be first in anything	2
106	When a person is no longer interested in doing his best he is done for	2
99	The police may sometimes be right in giving a man the "third degree" to make him talk	3
4	To spare the rod is to spoil the child	3
64	Children outgrow their bad habits	9
36	We are justified in refusing to forgive our enemies	3
108	It is impossible at any given time to change one's emotions	5
122	Most people can be truly outstanding in at least one area of their work	2
30	I prefer to have someone with me when I receive bad news	8
32	Sympathy is the most devine passion of the human heart	10
44	I find it easy to set standards of "right" or "wrong"	11
9	Men are created equal in mental capacity	9

ITEM NUMBER	ITEM STEM	IRRATIONAL BELIEF NO.
3 Items	Cluster #3	KR-20 estimate .34
19	I like to bear responsibility alone	8
41	I prefer to be alone	8
85	I prefer to be independent of others in making decisions	8



TABLE 5 (continued)

ITEM NUMBER	ITEM STEM	IRRATIONAL BELIEF NO.
Unclustered Items		
52	My folks are not reasonable to me when they demand my obedience	8
73	I usually like to be somewhere else than home	7

The second grouping tended to intensify the traits identified in the first analysis. On the basis of this grouping two major structural features seem implicit within the I-I Inventory. The 42 item cluster seems to measure feelings of insecurity, alienation and impotence. The second major group appears to measure moral rigidity and inflexibility.

Relating these groupings to the eleven original subtests several things become apparent. While the 11 individual groups are not completely separable, the subtests do for the most part remain intact. Table 6 shows how the items from the original subtest separate into clusters. Cluster 1 seems to provide an adequate sample of irrational beliefs numbers 1, 4, 5, 6, 9, and 10; cluster 2 seems to measure irrational beliefs 3 and 11. Irrational idea number 8 did not seem to fit into either group while items from ideas 2 and 9 split between the larger groupings.



TABLE 6

## ITEM BREAKDOWN FROM THE CLUSTER ANALYSIS

CLUSTER NUMBER	NUMBER OF ITEMS FROM IRRATIONAL BELIEF											TOTAL
	1	2	3	4	5	6	7	8	9	10	11	
1	7	2	0	5	5	8	6	1	3	4	1	42
2	0	3	6	0	1	0	0	1	2	1	4	18
3	0	0	0	0	0	0	0	3	0	0	0	3
TOTAL	7	5	6	5	6	8	6	5	5	5	5	63
POSSIBLE	7	5	6	5	6	8	7	6	5	5	5	65
UNCLASSIFIED	0	0	0	0	0	0	1	1	0	0	0	2

As a test of the overall homogeneity of the 65 item test an internal consistency coefficient of .79 was calculated. In addition, McPhail (1969) using the 65 item version of the test developed in the present investigation found a test-retest reliability estimate of .71. Ninety grade 11 subjects were sampled in her test-retest investigation which covered a 7 day period.

On the basis of this cluster analysis it is apparent that the items contained in the I-I Inventory do not separate into the 11 subtests for which the items were originally written. However, as Table 6 indicates the subtests do, for the most part, remain intact when





subsumed under the two larger groupings identified in the present investigation. The estimates of internal consistency (0.79) and test-retest reliability (0.71) reported above indicate that the 65 items retained after the item analysis constitute a relatively homogeneous and reliable measure of irrational beliefs. In order to provide further evidence of the validity of the 65 item test a comparison of the original and shortened versions of the test was made. The results of this comparison are reported in the following section.

#### C. External Correlates

To give an indication of the extent to which the 65 item version of the I-I Inventory produced in this investigation retains the structural characteristics of the original 122 item version, correlations between scores on these instruments and scores on Rokeach's Dogmatism Scale, Intelligence, English achievement, political preference and church attendance were computed. Results are listed in Table 7.



TABLE 7

A COMPARISON OF THE EXTERNAL CORRELATES OF THE 122  
ITEM ORIGINAL VERSION OF THE I-I INVENTORY AND THE  
SHORTENED 65 ITEM VERSION OF THE SAME INSTRUMENT

EXTERNAL CORRELATES	N	122 ITEM VERSION		65 ITEM VERSION	
		r	SIG.LEVEL	r	SIG.LEVEL
Rokeach's Dogmatism Scale (WIB)	776	0.276	.001	0.188	.001
Intelligence (SCAT) Scores	215	0.041	N.S.	0.155	N.S.
Grade 11 English Marks	169	0.218	.004	0.213	.008
Church Attendance	799	-0.084	N.S.	0.016	N.S.
Political Preference	466	-0.041	N.S.	0.079	N.S.

On the basis of the observed Pearson product-moment correlations and significance levels it appears that the 65 item version of the I-I Inventory has retained the essential structural features of the original version. The discrepancies in correlation coefficients resulted in only minor changes in significance levels between the two inventories.

With the notable exception of English achievement correlations were as predicted. In the case of English grades the anticipated negative correlation with I-I Inventory scores was not observed. Even more surprising was the observed positive correlation between the



measures suggesting that persons high in irrational beliefs tend to achieve higher in English than do their more "rational" counterparts.





## CHAPTER V

### INTERPRETATION AND DISCUSSION

On the basis of the foregoing analyses it appears that the I-I Inventory measures two major psychological traits. The first of these is sampled by a cluster containing 42 items which seem to measure feelings of insecurity and alienation. A second group of 18 items reflect moral rigidity and lack of tolerance. Five other items fail to fall into either of the major classifications. The remaining 57 items were excluded because they did not meet the standards set for inclusion in any one of the eleven original subtests corresponding Ellis' irrational beliefs. The first major cluster contains all but 4 of the possible 38 items from subtests 1, 4, 5, 6, 7 and 10, while 10 of the 11 items from subtests 3 and 11 were incorporated into the second cluster. Items from subtests 2 and 9 split evenly into the two major groupings, while only 2 of the possible 6 items from subtest 8 fit into either of the large clusters. Thus it appears that there is a large degree of similarity among the traits measured by the 11 subtests which constitute the original I-I Inventory. If, as appears to be the case on the basis of previous research, these 11 subtests are adequate samples of Ellis' eleven irrational beliefs it follows that the beliefs themselves overlap and that they may perhaps be classified into a more succinct structure. In the present analysis the following grouping of irrational ideas seems plausible:



Irrational Idea 1 - The idea that it is a dire necessity to be loved and approved by virtually every significant person in the community.

Irrational Idea 4 - The idea that it is awful and catastrophic when things are not the way one would very much like them to be.

Irrational Idea 5 - The idea that human unhappiness is externally caused and that people have very little or no control over their sorrows and disturbances.

Irrational Idea 6 - The idea that if something is or may be dangerous or fearsome one should be terribly concerned about it and should dwell upon the possibility of its occurring.

Irrational Idea 7 - The idea that it is easier to avoid than to face certain life difficulties and self-responsibilities.

Irrational Idea 10 - The idea that one should become quite upset over other peoples' problems and disturbances (i.e., that one should point out the other's deficiencies and insist that he change).

Items within this cluster seem to reflect two main themes.

One of these appears to be an overall dissatisfaction with interpersonal relationships. Particularly evident were items expressing



a sense of isolation and distance from parents and peers.\* The second theme reflected by items within the first cluster seemed to be related to feelings of helplessness. Many items\*\* dealt with concern to the individual from sources outside of himself over which he had no control. Feelings of impotence and isolation have been associated by a number of persons including Fromm (1965) and Camus (1958) with what they call "alienation." Schachtel (1961) describes the alienated individual as being unable to form an adequate concept of self due primarily to his inability to identify himself with or differentiate himself from other significant persons in his environment. This inability to discover self causes the individual to see himself as a victim of "unchangeable fate...under which he...is doomed to live and die...(1961, p. 125)". Thus it appears that the items in cluster one group together to provide a measure of insecurity and alienation.

The second cluster includes the following ideas:

Irrational Idea 3 - The idea that certain people are bad, wicked and villainous and should be severely blamed or punished for their actions.

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\*Items in this category include numbers 49, 100, 97, 105, 45, 35, 76, 65, 34, 54, 16, 69, 103, 67, 95, all of which are included in the list of items in cluster I on pages 31-33 of this manuscript.

\*\*A second group of items contained in cluster 1 include numbers 39, 92, 15, 83, 79, 101, 50, 72.





Irrational Idea 11 - The idea that there is invariably a right, precise and perfect solution to human problems and that it is catastrophic if the perfect solution cannot be found.

The items sampling these two ideas seem to pool together to form a measure of what might be described as moral rigidity and intolerance. Many of the items suggest simplistic often violent methods of dealing with other persons whose views differ from those of the respondent.\*

The items from irrational beliefs 2 and 9, listed below, did not fall exclusively into either of the larger groupings. The items, however, were split between the two groups and in this respect these ideas were compatible with the ones previously listed.

Irrational Idea 2 - The idea that one should be thoroughly competent, adequate and achieving in all possible respects if one is to consider oneself worthwhile.

Irrational Idea 9 - The idea that one's past is an all important determiner of one's present behavior and that because something once strongly affected one's life, it should continue to do so.

The remaining idea, Irrational Idea 8, seems to be less closely related to the others and 4 of the 6 items in this subtest did not fall into either classification.

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\*Examples of items which suggest this trait include numbers 14, 36, 47, 99, 107 and 119 found in cluster 2 on pages 33,34.



Irrational Idea 8 - The idea that one should be dependent upon others and needs someone stronger than oneself on whom to rely.

The KR-20 reliability estimate calculated for all 65 items of the shortened version of the I-I Inventory produced in this investigation was 0.79. On this basis it would appear that the present scoring method wherein a single score is produced provides a valid and reliable measure of adherence to an irrational belief system.

Limitations in the present investigation make it clear that caution should be exercised in accepting the reclassification of irrational ideas suggested herein. To begin with the classification of ideas was based solely upon the responses made to the I-I Inventory by a single sample of students. It remains to be determined whether similar results could be obtained using other samples. Similarly this study was limited to an investigation of irrational beliefs as sampled by the I-I Inventory. It would be interesting to replicate the present investigation using another instrument measuring irrational beliefs to discern whether the same grouping of ideas would result.

While the data do not support Ellis' original classification the grouping found in this investigation has some interesting implications. For example, the items in cluster 1 seem to reflect feelings of insecurity and alienation which, at present, are significant social problems. In the past half century there has been an increasing awareness of man's feelings of loneliness, insecurity and



alienation in a seemingly indifferent, if not hostile, environment. Rollo May, Victor Frankl and Erich Fromm number among the prominent psychologists who have written extensively on modern man's insecurity in a technological society. Sociologists, too, recognize alienation as an outstanding current social problem. Josephson and Josephson (1962) edited a publication containing numerous essays by noteworthy authors related to alienation. Riesman (1950) and Friedenberg (1959) made clear that the pangs of insecurity and alienation are severely felt by adolescents. The so-called "hippie cult" which has "opted out" of contemporary society is a dramatic indicator of the extent to which these feelings prevail.

In fact, the very widespread adherence to these beliefs particularly to those relating to insecurity and alienation may provide an explanation of the observed correlation between English achievement and irrational beliefs. If insecurity and alienation are as prevalent as they appear, they may provide a measure of social awareness. Thus we might expect the socially sensitive student to be more concerned with these issues. Since in the past few years High School English courses have laid increasing emphasis on contemporary issues, we might expect the socially aware student to achieve well in English, or conversely the high English achiever to be socially aware. We might also expect him to reflect this awareness through the scores he obtains on instruments such as the I-I Inventory.

This suggestion is not necessarily at odds with the earlier findings of Zingle and Conklin who reported negative correlations





between I-I Inventory scores and aggregate achievement. For, while logical connections between social awareness, I-I Inventory scores and English achievement have been suggested, no similar connection has been found between the former two variables and achievement in such areas as mathematics, physics, chemistry, typing, accounting, automotives, etc. Had Zingle and Conklin reported correlations between I-I Inventory scores and English achievement alone, perhaps the results may not have been so discrepant. However, it appears that further investigation will be necessary to validate and clarify the connection suggested in the present research.

#### CONCLUSION

The analyses carried out in the present investigation make it appear doubtful that irrational beliefs can be separated, at least empirically, into the eleven discreet ideas suggested by Ellis. However, the homogeneity of the items seem to suggest that there is an underlying similarity between these eleven beliefs and that, therefore, a single test score representing a tendency towards irrational beliefs is plausible. On the basis of the observed structural similarity between the original 122 item version of the I-I Inventory and the 65 item version produced through item analysis in the present investigation, it appears that the shorter version provides an adequate measure of irrational beliefs. This congruence between the tests, coupled with the apparent usefulness of the longer version in a number of investigations, many of which have been cited in this manuscript, suggests the 65 item I-I Inventory could be a useful instrument for



carrying out further investigations.

If, as has been suggested, the 65 item version of the test does provide a valid and reliable measure of irrational beliefs, it has certain advantages over the original version. For example, the former can be completed more quickly, an obvious administrative advantage.

#### IMPLICATIONS FOR FURTHER RESEARCH

The present investigation has uncovered several issues which seem worthy of further investigation. To begin with, as stated earlier, the reclassification of irrational ideas into two groups was based upon responses made to the I-I Inventory alone. A validation study using another measure of irrational beliefs might provide further insight into the structure of irrational beliefs. It would also be interesting to pursue the study of the relationship between irrational beliefs and English achievement. If, as was suggested in this manuscript, the relationship is based upon social awareness it seems probable that a similar and perhaps even stronger relationship may exist between I-I Inventory scores and achievement in such subjects as social studies and sociology. If a study to clarify the above relationship was carried out some measures of social alienation could be included to help determine whether, in fact, items classified herein as measures of insecurity and alienation are appropriately labelled.



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## A P P E N D I X



IRRATIONAL IDEAS UBIQUITOUS IN OUR SOCIETY

(Albert Ellis)



1. The idea that it is a dire necessity for an adult to be loved or approved by everyone for everything he does - instead of his concentrating on his own self-respect, on winning approval for necessary purposes (such as job achievement), and on loving rather than being loved.
2. The idea that one should be thoroughly competent, adequate, intelligent, and achieving in all possible respects if one is to consider oneself worthwhile - instead of the idea that one should do rather than always try to do well and that one should accept oneself as a quite imperfect creature, who has general human limitations and specific fallabilities.
3. The idea that certain people are bad, wicked, or villainous and that they should be severely blamed and punished for their villainy - instead of the idea that certain acts are inappropriate or antisocial and that people who perform such acts are invariably stupid, ignorant, or emotionally disturbed.
4. The idea that it is awful and catastrophic when things are not the way one would like them to be, and that one should certainly try to change or control conditions so that they become more satisfactory, but that if changing or controlling uncomfortable situations is impossible, one had better become resigned to their existence and stop telling oneself how awful they are.
5. The idea that human unhappiness is externally caused and that people have little or no ability to control their sorrows and disturbances - instead of the idea that virtually all human unhappiness is caused or sustained by the view one takes of things rather than the things themselves.
6. The idea that if something is or may be dangerous or fearsome one should be terribly concerned about it and should keep dwelling on the possibility of its occurring - instead of the idea that if something is or may be dangerous or fearsome one should frankly face it and try to render it nondangerous and, when that is impossible, think of other things and stop telling oneself what a terrible situation one is or may be in.
7. The idea that it is easier to avoid than to face certain life difficulties and self-responsibilities - instead of the idea that the so-called easy way is invariably the much harder way in the long run and that the only way to solve difficult problems is to face them squarely.





8. The idea that one should be dependent on others and needs someone stronger than oneself on whom to rely - instead of the idea that it is usually far better to stand on one's own feet and gain faith in oneself and one's ability to meet difficult circumstances of living.
9. The idea that one's past history is an all-important determiner of one's present behavior and that because something once strongly affected one's life, it should indefinitely have a similar effect - instead of the idea that one should learn from one's past experiences but not be overly-attached to or prejudiced by them.
10. The idea that one should become quite upset over other people's problems and disturbances - instead of the idea that other people's deficiencies are largely their problems and that putting pressure on them to change is usually least likely to help them do so.
11. The idea that there is invariably a right, precise, and perfect solution to human problems and that it is catastrophic if this perfect solution is not found - instead of the idea that one should first make an effort to think of several possible solutions and to choose, from these alternatives, the one that is most practical and feasible.



ROKEACH'S DOGMATISM SCALE

WHAT I BELIEVE



WHAT I BELIEVE

NAME: \_\_\_\_\_

Here are 25 statements. Sometimes you will agree with them, sometimes you will disagree. You can be sure that, whether you agree or disagree, many people will feel the same way as you do. Take statement J: "I get mad when a person stubbornly refuses to admit he's wrong." You can respond to this statement in any one of these six ways:

- |                          |                             |
|--------------------------|-----------------------------|
| +1: I agree a little     | -1: I disagree a little     |
| +2: I agree on the whole | -2: I disagree on the whole |
| +3: I agree very much    | -3: I disagree very much    |

Once you have picked out your answer, circle its number (+1 or +2 or +3 or -1 or -2 or -3) beside the letter of the statement which will be J in this case. For example, if your answer to statement J is "I disagree a little," you will circle -1 beside the letter J.

Do you understand what to do?

Now begin with statement A and go through to statement Y. After each statement write the number of your choice beside the correct letter.

- 3-2-1+1+2+3 A. It is only natural for a person to have a guilty conscience.
- 3-2-1+1+2+3 B. The highest and best type of government is a democracy run by those who are most intelligent.
- 3-2-1+1+2+3 C. I believe in free speech but not for everybody in our society.
- 3-2-1+1+2+3 D. Man on his own is a helpless and miserable creature.
- 3-2-1+1+2+3 E. In a heated discussion I generally become so absorbed (interested) in what I am going to say that I forget to listen to what the others are saying.
- 3-2-1+1+2+3 F. It is better to be a dead hero than a live coward.
- 3-2-1+1+2+3 G. Most of the people I talk to just don't understand what is going on around them.
- 3-2-1+1+2+3 H. There are a number of people I have come to hate because of the things they stand for.
- 3-2-1+1+2+3 I. There are two kinds of people in the world: those who are for the truth and those who are against the truth.
- 3-2-1+1+2+3 J. I get mad when a person stubbornly refuses to admit he's wrong.
- 3-2-1+1+2+3 K. Really the world we live in is a pretty lonesome place.





- 3-2-1+1+2+3 L. It is only natural for a person to be rather fearful of the future.
- 3-2-1+1+2+3 M. Most people just don't know what's good for them.
- 3-2-1+1+2+3 N. You can't tolerate too many differences of opinion among the members of any group.
- 3-2-1+1+2+3 O. I can't stand a person who thinks first of all of his or her own happiness.
- 3-2-1+1+2+3 P. The world is so complicated nowadays that the only way we can know what's going on is to rely on leaders or experts who can be trusted.
- 3-2-1+1+2+3 Q. A man who does not believe in some great cause or ideas has not really lived.
- 3-2-1+1+2+3 R. I'd like it if I could find someone who would tell me how to solve my personal problems.
- 3-2-1+1+2+3 S. If given the chance I would do something of great benefit to the world.
- 3-2-1+1+2+3 T. The present is all too often full of unhappiness. It is only the future that counts.
- 3-2-1+1+2+3 U. When it comes to differences of opinion in religion, we must be careful not to be too friendly with those who believe differently from us.
- 3-2-1+1+2+3 V. Most people just don't give a 'damn' for (care about) others.
- 3-2-1+1+2+3 W. Of all the different ideas in the world, there is probably only one that is right.
- 3-2-1+1+2+3 X. The main thing in life is for a person to want to do something important.
- 3-2-1+1+2+3 Y. Once I get wound up in a heated discussion I just can't stop.



## STUDENT DATA SHEET



NAME: \_\_\_\_\_  
Surname Initials

GRADE: \_\_\_\_\_

SCHOOL: \_\_\_\_\_

AGE: \_\_\_\_\_ Years \_\_\_\_\_ Months \_\_\_\_\_

SEX: (Circle) M F

FATHER'S NAME: \_\_\_\_\_

FATHER'S OCCUPATION: \_\_\_\_\_  
(Be specific. For example: sales clerk at Eaton's, door to door salesman for Fuller-Brush, travelling salesman for Massey-Ferguson, manager for Royal Type-writers. If in civil service, what job? For example: mail sorter at post office)

MOTHER'S OCCUPATION: \_\_\_\_\_  
Full time: \_\_\_\_\_ Part time: \_\_\_\_\_

Do you use a language other than English in your home? \_\_\_\_\_  
If you do

- a) name it here \_\_\_\_\_  
b) circle the words which tell how often you use it:

hardly ever quite often most of the time

About how long have you lived in Canada? \_\_\_\_\_

CHURCH PREFERENCE: \_\_\_\_\_  
Attendance:

- a) once a week \_\_\_\_\_  
b) once a month \_\_\_\_\_  
c) special holidays \_\_\_\_\_  
d) once a year \_\_\_\_\_  
e) not at all \_\_\_\_\_

If you could vote in an election how would you vote?

NDP \_\_\_\_\_  
Liberal \_\_\_\_\_  
Progressive Conservative \_\_\_\_\_  
Social Credit \_\_\_\_\_  
Undecided \_\_\_\_\_

If you were ready to choose an occupation, what would you choose? \_\_\_\_\_

Do you have a TV? \_\_\_\_\_ If you do, how many hours per week do you watch it?

Check one:

- 0 - 5 hours \_\_\_\_\_  
6 - 10 hours \_\_\_\_\_  
11 - 15 hours \_\_\_\_\_  
16 - 20 hours \_\_\_\_\_  
21 - 25 hours \_\_\_\_\_  
Over 25 hours \_\_\_\_\_





THE ORIGINAL I-I INVENTORY

(Harvey Zingle)



I-I INVENTORY

Name \_\_\_\_\_

Date \_\_\_\_\_ Grade \_\_\_\_\_

To The Student

This is a study of events and experiences in everyday life. You are asked to cooperate seriously and carefully in marking the items in this booklet. This is not an intelligence test. The best answer to each statement is your own first impression - there are no right or wrong answers.

Your answers will be treated with the strictest confidence and in no case will they be used to cause you any embarrassment.

INSTRUCTIONS FOR MARKING ANSWERS

For each statement, decide whether your answer is "Yes" or "No". If your answer is a definite "Yes" put an (x) on the end of the line where the "Yes" is typed. If your answer is a definite "No" put an (x) on the end of the line nearest the "No". If you are uncertain as to how you feel about the statement mark an (x) on the middle of the line. If the true answer is somewhere between the yes and no, put the (x) where it is most true for you.

Think carefully, but do not spend too much time on any one question. Let your own personal experience or opinion guide you to choose the answer you feel about each statement.

There is no time limit.

Please mark every item.



- |  |       |   |   |   |    |
|--|-------|---|---|---|----|
| 1. I would rather play by myself than with someone.                                      | Yes   |   | ? |   | No |
|  | '     | ' | ' | ' | '  |
|  | <hr/> |   |   |   |    |
| 2. I prefer to get things done very quickly rather than being slow and sure in movement. | Yes   |   | ? |   | No |
|  | '     | ' | ' | ' | '  |
|  | <hr/> |   |   |   |    |
| 3. All human lives are equally sacred.   | Yes   |   | ? |   | No |
|  | '     | ' | ' | ' | '  |
|  | <hr/> |   |   |   |    |
| 4. I usually object when a person steps in front of me in a line of people.              | Yes   |   | ? |   | No |
|  | '     | ' | ' | ' | '  |
|  | <hr/> |   |   |   |    |
| 5. I have sometimes had a nickname which I didn't like very well.                        | Yes   |   | ? |   | No |
|  | '     | ' | ' | ' | '  |
|  | <hr/> |   |   |   |    |
| 6. I am afraid in the dark.  | Yes   |   | ? |   | No |
|  | '     | ' | ' | ' | '  |
|  | <hr/> |   |   |   |    |
| 7. I prefer to accept suggestions rather than work them out for myself.                  | Yes   |   | ? |   | No |
|  | '     | ' | ' | ' | '  |
|  | <hr/> |   |   |   |    |
| 8. It is better to tell your troubles to your friends than to keep them to yourself.     | Yes   |   | ? |   | No |
|  | '     | ' | ' | ' | '  |
|  | <hr/> |   |   |   |    |
| 9. Men are created equal in mental capacity.   | Yes   |   | ? |   | No |
|  | '     | ' | ' | ' | '  |
|  | <hr/> |   |   |   |    |
| 10. It is necessary to be especially friendly to new students.                           | Yes   |   | ? |   | No |
|  | '     | ' | ' | ' | '  |
|  | <hr/> |   |   |   |    |
| 11. School promotions should be for intellectual merit alone.                            | Yes   |   | ? |   | No |
|  | '     | ' | ' | ' | '  |
|  | <hr/> |   |   |   |    |
| 12. I like to be praised.  | Yes   |   | ? |   | No |
|  | '     | ' | ' | ' | '  |
|  | <hr/> |   |   |   |    |
| 13. It is foolish to let others see your emotions.                                       | Yes   |   | ? |   | No |
|  | '     | ' | ' | ' | '  |
|  | <hr/> |   |   |   |    |
| 14. To spare the rod is to spoil the child.  | Yes   |   | ? |   | No |
|  | '     | ' | ' | ' | '  |
|  | <hr/> |   |   |   |    |
| 15. I worry about little things.   | Yes   |   | ? |   | No |
|  | '     | ' | ' | ' | '  |
|  | <hr/> |   |   |   |    |
| 16. There are people who try to do me harm or hurt me.                                   | Yes   |   | ? |   | No |
|  | '     | ' | ' | ' | '  |
|  | <hr/> |   |   |   |    |
| 17. I sometimes worry about my health.   | Yes   |   | ? |   | No |
|  | '     | ' | ' | ' | '  |
|  | <hr/> |   |   |   |    |





- |  |   |
|--|---|
| 18. Students should not be required to take courses for which they see no use.                               | Yes<br>                  ?                 No<br> |
| 19. I like to bear responsibilities alone.   | Yes<br>                  ?                 No<br> |
| 20. It is a big aid to health to say each morning, "Day by day in every way I am getting better and better." | Yes<br>                  ?                 No<br> |
| 21. Helping others is the very basis of life.  | Yes<br>                  ?                 No<br> |
| 22. Firm convictions make for strength of character.   | Yes<br>                  ?                 No<br> |
| 23. I feel that it is important to get on well with my teachers and principal.                               | Yes<br>                  ?                 No<br> |
| 24. Will power is the most important trait.  | Yes<br>                  ?                 No<br> |
| 25. The "insanity plea" as a defence in murder trials is undesirable.  | Yes<br>                  ?                 No<br> |
| 26. I must learn to "keep my head" when things go wrong.   | Yes<br>                  ?                 No<br> |
| 27. I think that I am getting a square deal in life.   | Yes<br>                  ?                 No<br> |
| 28. It is useless to worry about things that cannot be changed or corrected.                                 | Yes<br>                  ?                 No<br> |
| 29. It is better to live a coward than die a hero.   | Yes<br>                  ?                 No<br> |
| 30. I prefer to have someone with me when I receive bad news.  | Yes<br>                  ?                 No<br> |
| 31. Some children are dull and unimaginative because of defective training in home and school.               | Yes<br>                  ?                 No<br> |
| 32. Sympathy is the most divine passion of the human heart.  | Yes<br>                  ?                 No<br> |
| 33. The good person is usually right.  | Yes<br>                  ?                 No<br> |
| 34. Sometimes I feel that no one loves me.   | Yes<br>                  ?                 No<br> |



35. I find it difficult to take criticism without feeling hurt.

Yes		?		No
'	'	'	'	'
<hr/>				

36. We are justified in refusing to forgive our enemies.

Yes		?		No
'	'	'	'	'
<hr/>				

37. It is all right to create a scene in order to get ones own way.

Yes		?		No
'	'	'	'	'
<hr/>				

38. Riches are a sure basis for happiness in the home.

Yes		?		No
'	'	'	'	'
<hr/>				

39. I worry over possible misfortunes.

Yes		?		No
'	'	'	'	'
<hr/>				

40. I have sometimes crossed the street to avoid meeting some person.

Yes		?		No
'	'	'	'	'
<hr/>				

41. I prefer to be alone.

Yes		?		No
'	'	'	'	'
<hr/>				

42. The boy who regularly stands at the foot of the his class is often a great success after leaving school.

Yes		?		No
'	'	'	'	'
<hr/>				

43. I get disturbed when neighbours are very harsh with their little children.

Yes		?		No
'	'	'	'	'
<hr/>				

44. I find it easy to set standards of "right" and "wrong".

Yes		?		No
'	'	'	'	'
<hr/>				

45. Jeers humiliate me even when I know that I am right.

Yes		?		No
'	'	'	'	'
<hr/>				

46. Admiration gratifies me more than achievement.

Yes		?		No
'	'	'	'	'
<hr/>				

47. Punishment is a sure cure for crime.

Yes		?		No
'	'	'	'	'
<hr/>				

48. I frequently feel self-conscious about my appearance.

Yes		?		No
'	'	'	'	'
<hr/>				

49. My feelings are easily hurt.

Yes		?		No
'	'	'	'	'
<hr/>				

50. Sometimes I am troubled by thoughts of death.

Yes		?		No
'	'	'	'	'
<hr/>				

51. If I were able to do so I would attend some other school than the one I am now attending.

Yes		?		No
'	'	'	'	'
<hr/>				



- |   |       |   |   |   |    |
|---|-------|---|---|---|----|
| 52. My folks are not reasonable to me when they demand obedience.   | Yes   |   | ? |   | No |
|   | '     | ' | ' | ' | '  |
|   | <hr/> |   |   |   |    |
| 53. Habits of pre-school years carried over into adult life may help determine our usefulness.              | Yes   |   | ? |   | No |
|   | '     | ' | ' | ' | '  |
|   | <hr/> |   |   |   |    |
| 54. I get annoyed when people are impolite to me.   | Yes   |   | ? |   | No |
|   | '     | ' | ' | ' | '  |
|   | <hr/> |   |   |   |    |
| 55. If one needs something badly enough and cannot buy it, there are times when it is all right to take it. | Yes   |   | ? |   | No |
|   | '     | ' | ' | ' | '  |
|   | <hr/> |   |   |   |    |
| 56. I want people to like me better.  | Yes   |   | ? |   | No |
|   | '     | ' | ' | ' | '  |
|   | <hr/> |   |   |   |    |
| 57. Too much importance is attached to the possession of money and good clothes in this school.             | Yes   |   | ? |   | No |
|   | '     | ' | ' | ' | '  |
|   | <hr/> |   |   |   |    |
| 58. Criminals are really sick and should be treated like sick persons.                                      | Yes   |   | ? |   | No |
|   | '     | ' | ' | ' | '  |
|   | <hr/> |   |   |   |    |
| 59. I get terribly upset and miserable when things are not the way I would like them to be.                 | Yes   |   | ? |   | No |
|   | '     | ' | ' | ' | '  |
|   | <hr/> |   |   |   |    |
| 60. This school provides adequate opportunity for me to meet and make friends.                              | Yes   |   | ? |   | No |
|   | '     | ' | ' | ' | '  |
|   | <hr/> |   |   |   |    |
| 61. I worry about eternity.   | Yes   |   | ? |   | No |
|   | '     | ' | ' | ' | '  |
|   | <hr/> |   |   |   |    |
| 62. I need to learn how to keep from being too aggressive.  | Yes   |   | ? |   | No |
|   | '     | ' | ' | ' | '  |
|   | <hr/> |   |   |   |    |
| 63. I would like school better if teachers were not so strict.  | Yes   |   | ? |   | No |
|   | '     | ' | ' | ' | '  |
|   | <hr/> |   |   |   |    |
| 64. Children outgrow their bad habits.  | Yes   |   | ? |   | No |
|   | '     | ' | ' | ' | '  |
|   | <hr/> |   |   |   |    |
| 65. I get upset when I hear of people (not relatives or close friends) who are very ill.                    | Yes   |   | ? |   | No |
|   | '     | ' | ' | ' | '  |
|   | <hr/> |   |   |   |    |
| 66. It is all right to cheat in a game when you will not get caught.  | Yes   |   | ? |   | No |
|   | '     | ' | ' | ' | '  |
|   | <hr/> |   |   |   |    |
| 67. My folks do not take time to become acquainted with my problems.  | Yes   |   | ? |   | No |
|   | '     | ' | ' | ' | '  |
|   | <hr/> |   |   |   |    |





- |   |   |
|---|---|
| 68. This school places too much emphasis upon grades.   | Yes<br>                ?               No<br>                                 <br>----- |
| 69. The members of my family seem to criticize me a lot.  | Yes<br>                ?               No<br>                                 <br>----- |
| 70. I get very angry when I miss a bus which passes only a few feet away from me.   | Yes<br>                ?               No<br>                                 <br>----- |
| 71. I find that this school tends to make me unhappy.   | Yes<br>                ?               No<br>                                 <br>----- |
| 72. I can walk past a grave yard alone at night without feeling uneasy.   | Yes<br>                ?               No<br>                                 <br>----- |
| 73. I usually like to be somewhere else than at home.   | Yes<br>                ?               No<br>                                 <br>----- |
| 74. I enjoy being alone more than being with my classmates.   | Yes<br>                ?               No<br>                                 <br>----- |
| 75. A person who will not stand up for his rights as a teen-ager will probably not be able to stand up for his rights as an adult.          | Yes<br>                ?               No<br>                                 <br>----- |
| 76. Other people's problems frequently cause me great concern.  | Yes<br>                ?               No<br>                                 <br>----- |
| 77. Crime never pays.   | Yes<br>                ?               No<br>                                 <br>----- |
| 78. I wish that more affection were shown by more members of my family.   | Yes<br>                ?               No<br>                                 <br>----- |
| 79. I worry about tests.  | Yes<br>                ?               No<br>                                 <br>----- |
| 80. When I see movies about daring robberies, I usually hope the robber won't get caught in the end.  | Yes<br>                ?               No<br>                                 <br>----- |
| 81. When things are not the way I would like them to be, and it is not in my power to change them, I calmly accept things the way they are. | Yes<br>                ?               No<br>                                 <br>----- |
| 82. I feel that life has a great deal more happiness than trouble.  | Yes<br>                ?               No<br>                                 <br>----- |
| 83. I can face a difficult task without worry.  | Yes<br>                ?               No<br>                                 <br>----- |



84. I avoid inviting others to my home because it is not as nice as theirs. Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
85. I prefer to be independent of others in making decisions. Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
86. A juvenile delinquent will almost surely be a criminal when he becomes an adult. Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
87. He that loses his conscience has nothing left that is worth keeping. Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
88. It is better to have friends than fame. Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
89. My folks appear to doubt whether I will be successful. Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
90. I feel guilty when I misbehave and I expect to be punished. Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
91. Sticks and stones will break my bones, but words will never hurt me. Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
92. I tend to worry over possible troubles. Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
93. Many of my classmates are so unkind or unfriendly that I avoid them. Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
94. I tend to look to others for the kind of behavior they approve as right and wrong. Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
95. If a child is brought up in a home where there is much quarreling and unhappiness he will probably be unhappy in his own marriage. Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
96. People who unjustly criticize the government should be put in jail. Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
97. When a friend ignores me I become extremely upset. Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
98. If a person tries hard enough, he can be first in anything. Yes                      ?                      No  
 '                      '                      '                      '                      '
-



99. The police may sometimes be right in giving a man the "third degree" to make him talk.
- Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
100. It hurts me when my friends are unkind.
- Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
101. I worry about the possibility of an atomic attack by some foreign power.
- Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
102. I often spend more time in trying to think of ways of getting out of something than it would take me to do it.
- Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
103. I feel my parents have dominated me too much.
- Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
104. I know there is a God.
- Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
105. I find it very upsetting when people who are important to me are indifferent to me.
- Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
106. When a person is no longer interested in doing his best he is done for.
- Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
107. The best way to teach a child right from wrong is to spank him when he is wrong.
- Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
108. It is impossible at any given time to change one's emotions.
- Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
109. I frequently do things that I am afraid of doing in order to prove to myself that there is nothing intrinsically frightful about these things.
- Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
110. I am happiest when I am sitting around doing little or nothing.
- Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
111. Cooperation is better than competition.
- Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
112. It is sinful to doubt the Bible.
- Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
113. It makes me uncomfortable to be different.
- Yes                      ?                      No  
 '                      '                      '                      '                      '
-





114. People who do not achieve competency in at least one area are worthless.
- Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
115. People who perform acts which are immoral do so because they are too stupid or too ignorant to refrain from doing so.
- Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
116. Unhappiness largely comes from within and is largely created by the unhappy person himself.
- Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
117. I am naturally a lazy person.
- Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
118. It is better to take risks and to commit possible errors, than to seek unnecessary aid of others.
- Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
119. Persons who are punished for their "sins" usually change for the better.
- Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
120. It would be terrible or catastrophic to be a cripple.
- Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
121. I follow a definite study schedule during the school term.
- Yes                      ?                      No  
 '                      '                      '                      '                      '
- 
122. Most people can be truly outstanding in at least one area of their work.
- Yes                      ?                      No  
 '                      '                      '                      '                      '
-



65 ITEM VERSION OF THE I-I INVENTORY

PRODUCED AS A RESULT OF ITEM ANALYSIS



1. I usually object when a person steps in front of me in a line of people.
2. I have sometimes had a nickname which I didn't like very well.
3. I prefer to accept suggestions rather than work them out for myself.
4. Men are created equal in mental capacity.
5. To spare the rod is to spoil the child.
6. I worry about little things.
7. There are people who try to do me harm or hurt me.
8. I sometimes worry about my health.
9. I like to bear responsibilities alone.
10. It is a big aid to health to say each morning, "Day by day in every way I am getting better and better".
11. I prefer to have someone with me when I receive bad news.
12. Sympathy is the most divine passion of the human heart.
13. The good person is usually right.
14. Sometimes I feel that no one loves me.
15. I find it difficult to take criticism without feeling hurt.
16. We are justified in refusing to forgive our enemies.
17. I worry over possible misfortunes.
18. I prefer to be alone.
19. I get disturbed when neighbours are very harsh with their little children.
20. I find it easy to set standards of "right" and "wrong".
21. Jeers humiliate me even when I know that I am right.
22. Punishment is a sure cure for crime.
23. My feelings are easily hurt.





24. Sometimes I am troubled by thoughts of death.
25. My folks are not reasonable to me when they demand obedience.
26. I get annoyed when people are impolite to me.
27. I get terribly upset and miserable when things are not the way I would like them to be.
28. I worry about eternity.
29. Children outgrow their bad habits.
30. I get upset when I hear of people (not relatives or close friends) who are very ill.
31. My folks do not take time to become acquainted with my problems.
32. The members of my family seem to criticize me a lot.
33. I get very angry when I miss a bus which passes only a few feet away from me.
34. I can walk past a grave yard alone at night without feeling uneasy.
35. I usually like to be somewhere else than at home.
36. Other people's problems frequently cause me great concern.
37. I wish that more affection were shown by more members of my family.
38. I worry about tests.
39. When things are not the way I would like them to be, and it is not in my power to change them, I calmly accept things the way they are.
40. I feel that life has a great deal more happiness than trouble.
41. I can face a difficult task without worry.
42. I prefer to be independent of others in making decisions.
43. A juvenile delinquent will almost surely be a criminal when he becomes an adult.
44. He that loses his conscience has nothing left that is worth keeping.
45. My folks appear to doubt whether I will be successful.
46. I tend to worry over possible troubles.
47. Many of my classmates are so unkind or unfriendly that I avoid them.



48. If a child is brought up in a home where there is much quarrelling and unhappiness he will probably be unhappy in his own marriage.
49. When a friend ignores me I become extremely upset.
50. If a person tries hard enough, he can be first in anything.
51. The police may sometimes be right in giving a man the "third degree" to make him talk.
52. It hurts me when my friends are unkind.
53. I worry about the possibility of an atomic attack by some foreign power.
54. I often spend more time in trying to think of ways of getting out of something than it would take me to do it.
55. I feel my parents have dominated me too much.
56. I know there is a God.
57. I find it very upsetting when people who are important to me are indifferent to me.
58. When a person is no longer interested in doing his best he is done for.
59. The best way to teach a child right from wrong is to spank him when he is wrong.
60. It is impossible at any given time to change one's emotions.
61. It is sinful to doubt the Bible.
62. It makes my uncomfortable to be different.
63. I am naturally a lazy person.
64. Persons who are punished for their "sins" usually change for the better.
65. Most people can be truly outstanding in at least one area of their work.



COMPARISON OF THE ITEMS SELECTED BY ELLIS

WITH THOSE SELECTED BY ITEM ANALYSIS





COMPARISON OF THE ITEMS SELECTED  
BY THE TWO METHODS

IRRATIONAL IDEA	SELECTED BY BOTH METHODS	SELECTED BY DATA ANALYSIS ONLY	SELECTED BY ELLIS ONLY	TOTALS	
				Data	Ellis
1	34,45,97,105, 113,	67,78	88	7	6
2	35,79,106,122	98	46,57,114	5	7
3	36,119	14,47,99,107	3,25,58,115	6	6
4	15,59,70,81	4	48	5	5
5	49,91,100,108	5,16	82,116,120	6	7
6	39,72,83,92	17,50,61,101	28,109	8	6
7	102,117	7,69*,73,89**, 93	110,121	7	4
8	19,85	30,41,52,103	94,118	6	4
9	9	20,64,86,95	--	5	1
10	43,76	32,54,65	--	5	2
11	33,112	44,87,104	96	5	3
TOTALS	32	33	19	65	51

\*Shifted from subtest 3

\*\*Shifted from subtest 2



THREE LARGEST CLUSTERS CONTAINED

WITHIN THE I-I INVENTORY

(First Analysis)



THREE LARGEST ITEM CLUSTERS CONTAINED  
IN THE I-I INVENTORY  
(First Method)

22 Items                                      Cluster #1                                      KR-20 estimate .81

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ITEM*	ITEM STEM	Irrational Idea No.
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39	I worry over possible misfortunes	6
92	I tend to worry over possible troubles	6
15	I worry over little things	4
49	My feelings are easily hurt	5
100	It hurts me when my friends are unkind	5
97	When a friend ignores me I become extremely upset	1
105	I find it very upsetting when people who are important to me are indifferent to me	1
45	Jeers humiliate me even when I know I'm right	1
59	I get terribly upset and miserable when things are not the way I would like them to be	4
35	I find it difficult to take criticism without feeling hurt	2
76	Other people's problems frequently cause me a great deal of concern	10

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\*Items are listed in the order in which they were included into the cluster. Thus the first 3 items have the greatest internal consistency. The fourth item is next closely related, then the fifth, etc. The cluster is terminated when all remaining items have the effect of lowering the KR-20 estimate of the cluster.





65	I get upset when I hear of people (not relatives or close friends) who are very ill	10
43	I get disturbed when neighbours are very harsh with their little children	10
83	I can face a difficult task without worry	6
79	I worry about tests	2
101	I worry about the possibility of an atomic attack by some foreign power	6
113	It makes me uncomfortable to be different	1
50	Sometimes I am troubled by thoughts of death	6
61	I worry about eternity	6
34	Sometimes I feel that no one loves me	1
72	I can walk past a graveyard without feeling uneasy	6
17	I sometimes worry about my health	

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ITEM	ITEM STEM	IRRATIONAL IDEA NO.
<hr/>		
9 Items	Cluster #2	KR-20 estimate .68
103	I feel my parents have dominated me too much	8
69	The members of my family seem to criticize me a lot	3
89	My folks appear to doubt whether I will be successful	2
73	I usually like to be somewhere else than at home.	7
52	My folks are not reasonable to me when they demand obedience	8
67	My folks do not take the time to become acquainted with my problems	1



78	I wish that more affection were shown by more members of my family	1
93	Many of my classmates are so unkind or unfriendly that I avoid them	7
16	There are people who try to do me harm or hurt me	5

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ITEM	ITEM STEM	IRRATIONAL IDEA NO.
<hr/>		
13 Items	Cluster #3	KR-20 estimate .63
112	It is sinful to doubt the Bible	11
104	I know there is a God	11
119	Persons who are punished for their "sins" usually change for the better	3
20	It is a big aid to health to say each morning, "Day by day in every way I am getting better and better"	9
107	The best way to teach a child right from wrong is to spank him.	3
47	Punishment is a sure cure for crime	
86	A juvenile delinquent will almost surely be a criminal when he becomes an adult	9
33	The good person is usually right	11
98	If a person tried hard enough he can be first at anything	2
106	When a person is no longer interested in doing his best he is done for	2
99	The police may sometimes be right in giving a man the "third degree" to make him talk	3
91	Sticks and stones may break my bones but words will never hurt me	5
87	He that loses his conscience has nothing left that is worth keeping	11

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**B29936**